



AN EMPIRICAL EXAMINATION OF CRUDE OIL, GOVERNMENT EXPENDITURE AND ECONOMIC GROWTH OF NIGERIA FROM 1981 TO 2014

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Abstract: - This study empirically examined the relationship between crude oil, government expenditure and economic growth of Nigeria for the period 1981 to 2014 using annual time series data on such variables as oil revenue, oil export, government expenditure and real GDP. The study employed the Vector Autoregression method. The findings of the multivariate VAR model revealed that there exists a significant long-run relationship between oil revenue, oil export, government expenditure and economic growth of Nigeria, judging from the high R^2 of the real GDP, oil revenue, oil export and government expenditure regressions of 0.998386, 0.949942, 0.968170 and 0.980322 respectively, and their respective F value (1778.155, 54.55815, 87.44791 and 143.2310). The variance decomposition analysis revealed that oil revenue and oil export exerts more pressure on government spending than it does to economic growth. Meanwhile, government expenditure has a highly significant influence on economic growth. The findings of the impulse response function in support of the variance decomposition analysis revealed that oil revenue, oil export and government spending have direct effects on economic growth of Nigeria. Also, economic growth, oil revenue and oil export significantly influences government spending in the country. The study therefore recommended that macroeconomic policies aimed at enhancing output in the oil sub-sector should be embarked upon by the government. In doing so, revenue would improve and more funds would be available for spending and hence, increase economic growth.

Keywords: Economic growth, crude oil revenue, crude oil export, government expenditure, real GDP, Vector Autoregression.

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Received on: May 2016

Accepted after revision: June 2016

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1 Introduction: Nigeria is endowed with over 30 different minerals which include gold, limestone, iron ore and coal. Being resource-rich, the country has about 37.2 billion barrels of proven oil reserves, 187 trillion cubic feet of proven natural gas and produces about 2.3

million barrels of oil per day. This makes Nigeria the largest oil producer in Africa and the tenth largest in the world. Despite this statistics, the country imports about 85% of its refined petroleum products due to the low capacity utilization (around 30%) and frequent breakdowns of its refineries (Aregbeyen and Kolawole, 2015).

Nigeria has an economy that is very dependent upon its oil sector. The oil sector accounts for about 95% of Nigeria's foreign exchange earnings, they have oil reserves estimated between 24 billion and 31.5 billion, and produce 90 million tons per year. Oil revenues are as well the main source of financing government expenditures and imports of goods and services, as increasing oil prices over the years has boosted public expenditures on social and economic infrastructures (see Hamdi & Sbia, 2013). Essentially, oil revenue constitutes about 14% of Nigeria's GDP and roughly 90% of its income (African Economic Outlook, 2012). This points to the fact that Nigeria's economy is mono-cultural as it depends mainly on oil. According to the World Bank (2014), while the re-basing has reduced the estimate of the share of oil and gas in GDP, the oil sector still accounts for a strong majority of exports and budgetary revenues in the country. Regarding government spending, Nigeria ranked among the largest spenders across all countries in Africa, as it spends between 35% and 67% of its GDP annually (see Fan, Yu & Saurkar, 2008). Yet the many years with oil money have not brought the population an end to poverty nor, at least until recently, have they enabled the economy to break out of what seems like perennial stagnation in the non-oil economy.

The problems with Nigerian economy have been traced to failure of successive governments to use oil revenue and excess crude oil income effectively in the development of other sectors of the economy. Over all, there has been poor

performance of national institutions such as power, energy, road, transportation, politics, financial systems, and investment environment have been deteriorating and inefficient. Outside of the energy sector, Nigeria's economy is highly inefficient. Moreover, human capital is underdeveloped. Nigeria's economy is struggling to leverage the country's vast wealth in fossil fuels in order to displace the devastating lack that affects about 57% of its population. In 2009, persistent inflation and environmental degradation led to deprivation of means of livelihood and other socio-economic factors to the people of Niger Delta which is the major oil producing region in Nigeria. Despite the fact that crude oil has been the source of Nigerian economy, the economy is faced with high rate of unemployment, wide spread oil spillage, poor standard of living, low per capita income and high rate of inflation (Baghebo, 2012).

It is against this backdrop that this paper examined the empirical relationship between crude oil, government expenditure and economic growth of Nigeria. The rest of the paper proceeds as follows: Section two centres on the review of literature and theoretical framework while section three gives information about the research methodology. Section four deals with the presentation and discussion of results, and section five covers the summary of findings, policy recommendations and conclusion.

2 Literature Review

2.1 Conceptual Review

2.1.1 Crude Oil: Crude oil is an oily bituminous liquid, consisting of a mixture of many substances mainly the elements of carbon and hydrogen, and thus known as hydrocarbon.

2.1.2. Crude Oil Export: Crude oil export can be defined as the surplus of crude oil of a country that are sent to other countries in the world.

Types of Crude Oil Export in Nigeria

- a. Bonny light oil

- b. Farcodos crude oil
- c. Quaibo crude oil
- d. Brass river crude oil

2.1.3. Crude Oil Revenue: Crude oil revenue refers to the income generated from the sales of crude oil. And it is the dominant source of government revenue, accounting for about 90 percent of total exports, and this approximates to 80% of total government revenues (Baghebo and Atima, 2013).

2.1.4 Government Expenditure: Government expenditure according to Wikipedia (2015) is the spending made by the government of a country on collective needs and wants such as pensions, provisions, infrastructures, education, health, etc.

2.1.5 Economic Growth: Economic growth is defined as the process whereby the real per capita income of a country increases over a long period of time. It is measured by the increase in the amount of goods and services produced in a country at a particular period of time (Jhingan, 2010).

2.2. An Overview of Nigeria's Oil Profile, Government Expenditure and Economic Growth: Before Nigeria gained her political independence in 1960, agriculture was the dominant sector in the economy, which provides both cash crops and food crops to the economy and accounted for the largest part of the foreign exchange of the country. Prior to the discovery of crude oil in commercial quantity in 1956 (Adedipe, 2004; Odularu, 2007), the Nigerian economy, though largely agrarian (Canagarajah and Thomas, 2001), was stable and steadily growing. The pleasant situation continued into the 1960s when agriculture played a dominant role in her economy in terms of contribution to GDP and foreign exchange earnings (Kwanashie, Ajilima and Garba, 1998). The stability and gradual growth of the economy reversed in the era of oil-dominant economy. The reversed situation was synonymous with

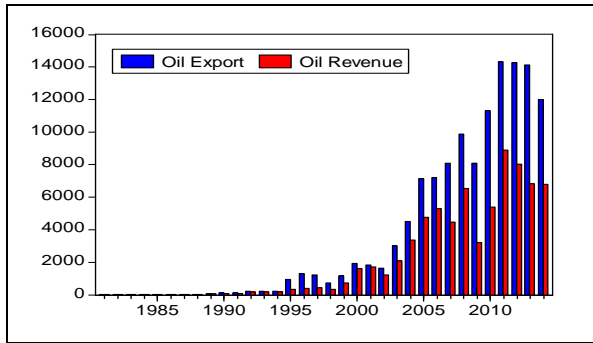
decline in the roles played by agriculture. The sector shrank in GDP contribution from 66% in 1958-1959 to 16% in 2004 (United State Agency for International Development, 2006). Its contribution to the nation's export revenues and foreign exchange earnings plummeted from 86% in 1955-59) to 1.8% in 1996 (Aigbokan, 2001). These worrisome declines have been attributed to growing activities of oil and mining industry in the country (Kwanashie, Ajilima and Garba, 1998).

Crude oil has metaphorically been referred to as the 'black gold' (Bamisaye and Obiyan, 2006). The resource has redefined the global economy in general and the Nigerian economy in particular. The impact of crude oil on Nigerian economy has been double-edged. It has benefited the country in some ways, and has in many other ways turned out to be a curse (Ogwumike and Ogunleye, 2008). Nigeria's proven oil reserves are estimated to 35 billion barrels, Natural gas reserves are 1000 trillion fti (2,800kmi) and its crude oil production was around 2.2 million barrels (350,000mi) per day (Odularu, 2008).

Oil accounts for about 90% of total exports. Analysis of oil data for past years shows that total receipt from oil export have been on the increase (see figure 2.1). Oil export receipt increased on the average from ₦10.7 billion in 1981 to ₦19.4 billion in 1982-1989, ₦436.2 billion in 1990-1996 and to ₦1.999 trillion in 1997-2004. Total receipt from oil export further increased from ₦8.6 trillion in 2005-2010 to ₦13.7 trillion in 2011-2014. Oil also accounts for approximately four-fifths of total government revenues. As depicted in Figure 2.1, revenue from oil in the country rose from ₦8.49 billion between 1981 and 1986 to ₦164.08 billion in 1992 but dropped a little to ₦162.10 billion in 1993. Revenue from oil in the country rose further from ₦416.81 billion in 1997 to ₦8.88

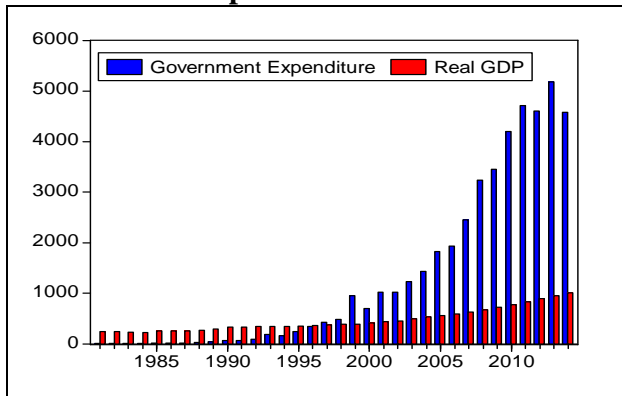
trillion in 2011, and later over the years, declined to ₦6.79 trillion in 2014 (CBN, 2014).

Figure 2.1: Trend of Oil Export and Oil Revenue from 1981 to 2014



Source: Extract from CBN Statistical Bulletin, 2014
 During these periods, total public expenditure increased consistently to ₦428.22 billion in 1997 from ₦9.64 billion in 1983, and further to ₦4.71 trillion in 2011. Public expenditure however declined by 2.3 and 11.7 per cent in 2012 and 2014 respectively (figure 2.2). With the past beneficial increase in the receipt from oil export, oil revenue and public expenditure, no valuable increase in real GDP has been

Figure 2.2: Trend of Real GDP and Government Expenditure from 1981 to 2014



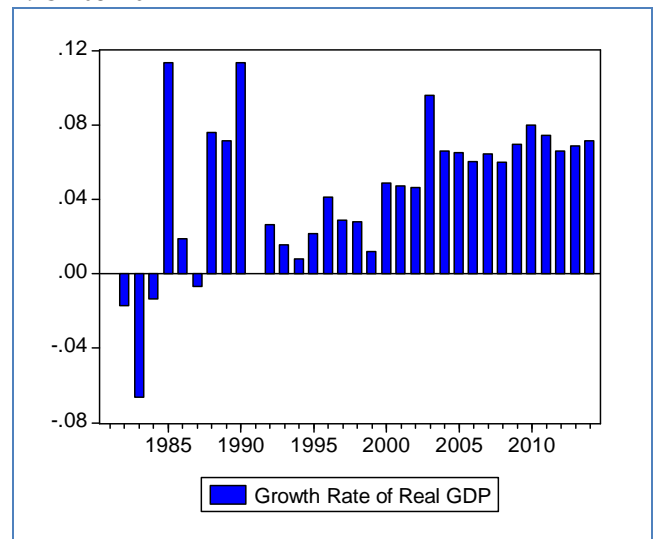
Source: Extract from CBN Statistical Bulletin, 2014
 Although the economy has enjoyed sustained economic growth for the past years, with annual real GDP increasing by around 6% (2003-2014) compared to previous years. The non-oil sector has been the main driver of growth, with the services sector contributing about 36.2%, while manufacturing and agriculture contributed about 9.95% and 22.9% respectively, however, the oil sector contributed only about 10.4% in 2014

recorded. Real GDP grew at a very poor rate as embedded in figure 2.2 and figure 2.3. The growth rate of GDP fluctuated within 1981-1987 and became stable in 1988, but grew by less than 5% within 1991 and 2002, peaking at an all time high of about 4.9% in 2002 and an all time low of 0.01% in 1991. The growth rate of real GDP was also less than 10% within 2003 and 2014 reaching an all time high of about 9.6% in 2003 and an all time low level of 5.98% in 2008 (CBN, 2014).

The question that comes to mind is that; have Nigerian economic setbacks been solely and directly caused by oil activities? Reporting Ibrahim (2007) points out that there is weak empirical support for negative impact of natural resources on economic growth and development. Thus, it can be inferred that the poor performance the Nigerian economy may not be entirely due to oil activities, but to factors relating to policy management of oil resources in the country. Discussed below are some of these challenging factors.

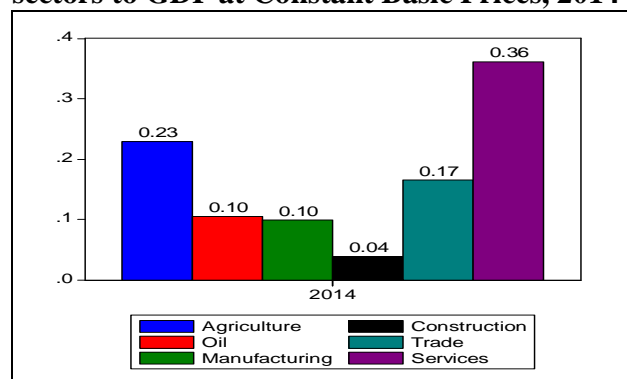
(see figure 2.4) (CBN, 2014). The economy is thus diversifying and is becoming more services-oriented, in particular through retail and wholesale trade, real estate, information and communication.

Figure 2.3: Growth rate of Real GDP from 1981 to 2014



Source: Extract from CBN Statistical Bulletin, 2014

Figure 2.4: Percentage Contribution of sectors to GDP at Constant Basic Prices, 2014



Source: Extract from CBN Statistical Bulletin, 2014
 The 2015 outlook is for moderate growth of 5%, due to vulnerability to slow global economic recovery, oil-price volatility and global financial developments. The low oil price will lead to a sharp decline in fiscal revenues. However, the overall impact on non-oil sector GDP will be relatively muted. The sector is, thus, expected to remain the main driver of growth over the medium term and, in the light of the recent macroeconomic challenges, the government has adopted an adjustment strategy that hinges on tightening government spending and shoring up non-oil revenues to compensate for dwindling oil revenues (Barungi, Ogunleye and Zamba, 2015).

2.2.1. Challenges in the Oil Sector: Despite the numerous benefits of the oil sector to the economy, there are some challenges facing the sector. These, in Odularu (2008), include:

- i. Public control and bureaucracy: The Nigeria National Petroleum Corporation (NNPC) is controlled by the ministry of petroleum resources. It lacks autonomy, the NNPC is characterized by inefficiency distribution and marketing.
- ii. Poor funding of investments: The federal government's delays in the payment of cash calls for its joint ventures operations in the upstream sub-sector, focusing more on maintenance rather than growth.
- iii. Communal disturbances from the area which the oil is extracted.

iv. Smuggling and diversion of petroleum product: Smuggling of petroleum products across the borders in quest for foreign exchange and to take undue advantage of the lower domestic prices from neighbouring countries prices.

v. Fraudulent domestic marketing practices: some marketers hoard products in periods of scarcity in order to sell in the black market at higher prices.

vi. Relatively low level of investments in the sector compared to its potentials.

vii. High technical cost of production: Due to low level of domestic technological development.

viii. Restrictions imposed by crisis and production disruptions caused by host communities.

ix. Environmental degradation due to the flaring of associated gas.

2.3. Empirical Literature Review: Observing that crude oil has been a major source of revenue, energy and foreign exchange for the Nigerian economy, Ishola, Olaleye, Olajide and Abikoye (2015) investigated the impact of crude oil revenue and government expenditure on Economic growth in Nigeria using the OLS technique of estimation. The study found that there exists a positive relationship between total expenditure, oil revenue and real GDP. They concluded that the oil industry is a vital industry in Nigeria and its output via oil revenue is a catalyst to economic growth.

Aregbeyen and Kolawole (2015) examined the relationships among oil revenue, government spending and economic growth in Nigeria over the period 1980 to 2012. Time series data were analyzed using econometric techniques which included Ordinary Least Square (OLS), Co-integration, Vector Error Correction Model (VECM), and Granger Causality to determine the direction of causality and the magnitude of impacts of the variables. Findings from the analysis revealed that oil revenue Granger caused both of total government spending and growth, while there was no-causality between

government spending and growth in the country. The study therefore suggested that government should increase spending on capital projects as well as intensify efforts at increasing output in the oil sub-sector in order to boost economic growth in Nigeria.

Asekunowo and Olaiya (2012) examined the relationship between crude oil revenue and economic development in Nigeria (a resource-rich country but with no development) and Botswana, Chile and Norway (resource-rich countries but with development) using survey method. Comparatively, the study attempted to unravel why these three countries have managed to record some measures of economic development while Nigeria seems unable to do so. The survey carried out showed that Nigeria may be lagging behind these countries developmentally because it may be suffering from institutional difficulties, voracity effects, excessive spending, excessive borrowing and fractionalisation causes of resource curse.

Odularu (2008) in his study of crude oil and the Nigerian economic performance using the Ordinary Least Square regression method revealed that crude oil consumption and export have contributed to the improvement of the Nigerian economy. The study recommended that the government should implement policies that would encourage the private sector to participate actively in the crude oil sector.

Abdullahi, Madu and Abdullahi (2015) examined the impact of Petroleum on Nigerian Economy. The study employed the simple linear regression model with the aid of Statistical Packages for Social Sciences (SPSS). Findings of the study revealed that petroleum has significant and positive impact on Nigeria economy. The researchers therefore recommended that the sector should be supported so that the country can derive the full benefits of the sector.

Baghebo and Atima (2013) examined the impact of petroleum on economic growth of Nigeria with data covering the period 1980-2011. The stationary status of the time series data was

examined using Augmented Dickey Fuller test. The regressand is Real Gross Domestic Product (RGDP), The regressors are Foreign direct investment (FDI), Oil revenue (OIL), Corruption index (CI), External debt (EXDEBT). The series attained stationary after differencing. The Johansen co-integration test was conducted to ascertain the long run equilibrium condition of the variables in the model. The variables were co-integrated because four co-integrating equations were found. The Parsimonious model was established to account for the short run dynamic adjustments required for stable long run equilibrium. It was discovered that the variables: oil revenue and corruption index impacts negatively on Real GDP, while FDI and EXDEBT have positive impact on the growth of the economy. This means that the resource curse theory is proven to be true in Nigeria. The study concludes that, if the petroleum industry bill is passed and implemented to the letters, there exists hope for the Nigerian nation.

Adedokun (2012) examined the effect of oil export revenue on economic growth in Nigeria between the period of 1975 and 2009. Empirical analysis from the study suggested that oil export revenue had a positively significant effect on growth both in the short-term and long-term in the country. The study further revealed that the primary determinant of foreign exchange earnings in Nigeria was changes in the world crude oil prices.

Akinlo (2012) assessed the importance of oil in the development of the Nigerian economy over the period 1960 to 2009. Empirical evidence showed that oil could cause other non-oil sectors to grow. However, oil had adverse effect on the manufacturing sector. Findings revealed bidirectional causality between oil and manufacturing, oil and building & construction, manufacturing and building & construction, manufacturing and trade & services and, agriculture and building & construction. It also confirmed unidirectional causality from manufacturing to agriculture and, trade & services to oil. However, the paper found no

causality between agriculture and oil, likewise between trade & services and building & construction. In conclusion, the study recommended appropriate regulatory and pricing reforms in the oil sector in order to integrate it into the economy, and as well reverse the negative impact of oil on the manufacturing sub sector in Nigeria.

Oladipo and Fabayo (2012) investigated global recession and the oil sector, based on its effects on economic growth in Nigeria. Analysis from the study revealed a negatively significant relationship between GDP and oil produced (domestic consumption and export) in the country. The result also showed the existence of a decline in the oil sector due to global recession. The study, therefore, recommended deregulation of the oil sector for efficient performance, and more rigorous policies that will reduce global effects on the sector as it contributes the largest per centage of income to the Nigerian economy.

Oyinlola and Akinnibosun (2013) examined the relationship between public expenditure and economic growth in Nigeria during the period 1970-2009. After confirming the Wagner's law, the result of the study further showed that economic growth and development were the main objectives of government expenditure, especially investment in infrastructure and human resources all of which fall under social and community services.

In Iran, Farzanegan (2011) analyzed the dynamic effects of oil shocks on different categories of the Iranian government expenditures from 1959 to 2007. The main results showed that Iran's military and security expenditures significantly responded to a shock in oil revenues (or oil prices), while social spending components did not show significant reactions to such shocks.

Hamdi and Sbia (2013) empirically examined the dynamic relationships among oil revenues, government spending and economic growth in the Kingdom of Bahrain over the period from 1960 to 2010. The study investigated whether

the huge government spending enhanced the pace of economic growth or not. Overall results suggested that oil revenues remained the principal source for growth, and the main channel which financed government spending. However, none of the reviewed studies employed the VAR method in their analysis. This study aimed at making a broad analysis of crude oil export and revenue, government spending and economic growth using the VAR approach, and would add to existing knowledge on the view of crude oil, government spending and economic growth of Nigeria.

2.4. Theoretical Framework: The study adopted the Keynesian theory of effective demand. According to Keynes an increase in any of the component of aggregate expenditure leads to a multiple increase in aggregate expenditure causing output and employment to rise. Given the basic Macroeconomic Identity where Aggregate Output = Aggregate Expenditure.

$$Y = C + I + G + (X - M) \quad 2.1$$

Where; Y = GNP, C = Consumption, I = Investment (or Domestic Capital formation), G = Government expenditure, X = Exports and, M = Imports.

Implicitly, equation 2.1 can be re-written as

$$Y = f(C, I, G, X, M) \quad 2.2$$

Export is made up of oil exports and non-oil exports. Thus, the total export will be disaggregated accordingly.

$$\text{Exports} = \text{Oil Export } (X_O) + \text{Non - oil Export } (X_{NO}) \quad 2.3$$

Combining identities equation 2.2 and 2.3 produces:

$$Y = f(C, I, G, X_O, X_{NO}, M) \quad 2.4$$

To examine the relationship between crude oil, government spending and economic growth, the variables capturing this relationship are included in equation 2.4 above. Hence, a change in any of the independent variables would have a multiple effect on economic growth. The relevance of this theory to the study is that it shows how changes government spending and oil export and revenue can be used to influence growth in the economy.

3. Research Methodology

3.1. Data Types and Sources: In examining the relationship between crude oil, government spending and economic growth of Nigeria for the period of 1981-2014, this work solely relied on secondary type of data collection, which was gotten from the Central Bank of Nigeria statistical bulletin and annual reports, and the various publications of the National Bureau of Statistics, 2014.

3.2. Method of Data Analysis: This study adopted the VAR method to analyze the relationship between crude oil, government spending and economic growth of Nigeria. The descriptive analysis of the time series data was carried out which contains the measures of central tendency and includes the mean, mode, median as well as measures of variation and other statistical characteristics of the variables. To avoid spurious regression due to the problem of non-stationarity of data, the Augmented Dickey Fuller test was used to check for the presence of a unit root in the variables, i.e. whether the variables are stationary or not and to what degree. After testing for the stationarity of the variables, the multivariate Vector Autoregression (VAR) (Impulse response functions and Variance Decompositions) model was employed to determine how much of the variation in the endogenous variables is determined by variations in its constituent sources. The VAR model assumes all variables are endogenous and analyze a simultaneity relationship among the variables, such that the direction of causality and exogeneity is clearly shown by the result (Gujarati & Porter, 2009).

3.3. Model Specification: In their study, Aregbeyen and Kolawole (2015) modelled the Equation (3.3) above can be represented in an unrestricted VAR linear form as:

$$RGDP_t = \alpha + \sum_{j=1}^n \beta_{1j}RGDP_{t-j} + \sum_{j=1}^n \gamma_{1j}OEX_{t-j} + \sum_{j=1}^n \theta_{1j}OREV_{t-j} + \sum_{j=1}^n \delta_{1j}GEX_{t-j} + \epsilon_{1t} \quad 3.4$$

$$OEX_t = \alpha^I + \sum_{j=1}^n \beta_{2j}RGDP_{t-j} + \sum_{j=1}^n \gamma_{2j}OEX_{t-j} + \sum_{j=1}^n \theta_{2j}OREV_{t-j} + \sum_{j=1}^n \delta_{2j}GEX_{t-j} + \epsilon_{2t} \quad 3.5$$

$$OREV_t = \alpha^{II} + \sum_{j=1}^n \beta_{3j}RGDP_{t-j} + \sum_{j=1}^n \gamma_{3j}OEX_{t-j} + \sum_{j=1}^n \theta_{3j}OREV_{t-j} + \sum_{j=1}^n \delta_{3j}GEX_{t-j} + \epsilon_{3t} \quad 3.6$$

$$GEX_t = \alpha^{III} + \sum_{j=1}^n \beta_{4j}RGDP_{t-j} + \sum_{j=1}^n \gamma_{4j}OEX_{t-j} + \sum_{j=1}^n \theta_{4j}OREV_{t-j} + \sum_{j=1}^n \delta_{4j}GEX_{t-j} + \epsilon_{4t} \quad 3.7$$

Where the α 's are constant terms, β 's, γ 's, θ 's and δ 's are matrices of coefficient to be estimated and the ϵ 's are vectors of innovation. $j=1, 2, \dots, n$, this is the lag length of each variable. In this study we however used the 2 lag length of each variable.

relationship among oil revenue, public spending and economic growth in Nigeria following Ram (1986, 1988), and Al-Qudair (2005), in a modified expression of the form;

$$\ln GSP_t = \alpha_0 + \alpha_1 \ln OREV_t + \epsilon_t \quad 3.1$$

$$\ln GDP_t = \beta_0 + \beta_1 \ln OREV_t + \beta_2 \ln GSP + \mu_t \quad 3.2$$

Where $\ln GDP$, $\ln GSP$ and $\ln OREV$ are the natural log of gross domestic product, government spending and oil revenue respectively, t signifies time period, α_0 and β_0 are constant terms, α_1 , β_1 and β_2 are coefficients and, ϵ and μ are the respective error terms.

This study modified the empirical work of Aregbeyen and Kolawole (2015) to examine the relationship between crude oil, government spending and economic growth of Nigeria. An unrestricted Vector Autoregressive (VAR) model was adopted. The vector of endogenous variables according to Cholesky ordering is economic growth (proxied by real GDP), oil export, oil revenue and government expenditure, expressed in a linear equation form as;

$$y_t = (RGDP_t, OEX_t, OREV_t, GEX_t) \quad 3.3$$

Where t signifies the time period, $RGDP$ is real gross domestic product, OEX is oil export, $OREV$ is oil revenue, GEX is government expenditure and, y_t is a k vector of the endogenous variables; $RGDP$, OEX , $OREV$ and GEX .

Thus, a VAR is a linear equation model in which each variable is in turn explained by its own lagged values, plus current and past values of the other variables. In this case, all variables are presented as dependent, thereby modelling every endogenous variable in the system as a function of lagged values of all the endogenous variables in the system.

4. Result Presentation and Analysis

4.1. Analysis of Data

4.1.1. Descriptive Analysis: The descriptive analysis contains the measures of central

tendency which include mean, mode, median as well as measures of variation and other statistical characteristics of the variables.

Table 4.1.1: Summary Statistics

	RGDP	OEX	OREV	GEX
Mean	465.3899	3695.402	2149.038	1316.276
Median	383.1495	1191.000	412.7950	457.6643
Maximum	1017.959	14323.20	8878.970	5185.318
Minimum	227.2547	7.200000	7.250000	9.636500
Std. Dev.	223.6302	4899.422	2779.529	1679.951
Skewness	1.020069	1.108864	1.054474	1.153067
Kurtosis	2.945956	2.730858	2.695156	2.869174
Jarque-Bera	5.900537	7.070233	6.432506	7.558440
Probability	0.052326	0.029155	0.040105	0.022840
Sum	15823.26	125643.7	73067.28	44753.37
Sum Sq. Dev.	1650346.	7.92E+08	2.55E+08	93133794
Observations	34	34	34	34

Source: Author’s Computation from E-views

The county’s mean real GDP was ₦465.3899 billion and its standard deviation was ₦223.6302 billion for the study period. Real GDP was used for measuring the country’s total output. So, the mean value indicates that on average the country’s total output is ₦465.3899 billion. The middle value of real GDP for the study period when the values are arranged in an ascending order is ₦383.1495 billion. The maximum and minimum real GDP were ₦1017.959 billion and ₦227.2547 billion in year 1984 and 2014 respectively.

The mean receipt from oil export for the country was ₦3695.402 billion each year for the period from 1981 to 2014. It was incorporated in the model for measuring the total receipt from oil export for the country. The mean oil export indicates that on average the country earn ₦3695.402 billion from oil export. The deviation of oil export from the mean amount was ₦4899.422 billion. The minimum receipt from oil export of ₦7.2billion and maximum receipt from oil export for the country of

₦14323.20 billion was recorded in year 1983 and 2011 respectively.

On average the country got ₦2149.038 billion worth of oil revenue each year for the test period, the middle value was ₦412.7950 billion and its standard deviation was ₦2779.529 billion. The mean revenue from oil indicates that on average the country’s revenue from oil was ₦2149.038 billion each year for the test period. Minimum revenue gotten from oil of ₦7.25 billion was recorded in year 1983. In contrast, maximum revenue gotten from oil of ₦8878.97 billion was recorded in year 2011. As stated above that the country had less receipt from oil export in 1983 and the high receipt from oil export in 2011. The lower receipt from oil export in 1983 and the higher receipt from oil export in 2011 might have contributed to the record of less oil revenue and high oil revenue in the same years.

The mean government expenditure was ₦1316.276 billion, its middle value was ₦457.6643 billion and its standard deviation was ₦1679.951 billion. The mean government

expenditure indicates that on average Nigerian government spends ₦1316.276 billion for the test period. But, the standard deviation shows the government deviation from the mean spending amount. Among the study variables government expenditure has minimum standard deviation and its minimum and maximum values were ₦9.636500 billion and ₦5185.318 billion in 1983 and 2013 respectively.

Skewness is a measure of asymmetry of the distribution of the series around its mean. The skewness of a normal distribution is zero. Positive Skewness implies that the distribution has a long right tail and negative Skewness implies that the distribution has a long left tail. From table 4.1.1, we observe that the four variables viz; RGDP, OEX, OREV and GEX have positive Skewness therefore they have long-right tails.

Kurtosis measures the peakedness or flatness of the distribution of the series. If the Kurtosis is above three, the distribution is peaked or leptokurtic relative to the normal and if the Kurtosis is less than three (3), the distribution is flat or platykurtic relative to normal. From table 4.1.1 all the four variables viz; RGDP, OEX, OREV and GEX have a Kurtosis of less than three (3), therefore they are flat or platykurtic.

Jarque-bera is a test statistic to test for normal distribution of the series. It thus follows that series will be normally distributed at 5% level of significance if the probability of J-B statistic is greater than 0.05. It was observed from the normality test in table 4.1.1 with reference to the Jarque-Bera estimates and their probability values that OEX, OREV and GEX are not normally distributed as their probability values of 00.029155, 0.040105 and 0.022840 respectively were less than the 0.05 level of significance. On the other hand, it was observed RGDP is normally distributed as its probability value of 0.052326 is greater than the 0.05 level of significance.

4.1.2. The Unit Root Test Results

The Augmented Dickey Fuller (ADF) test was used to check for the stationarity (presence of a unit root) of the variables and to what degree. If the sample values (ADF stat.) are more negative, the null hypothesis of non stationarity is rejected in the direction of the sided alternative which is accepted. A sample value less negative than the critical value implies non-rejection of the null hypothesis. A positive sample value also implies the non-rejection of the null hypothesis. The test result of the Augmented Dickey-Fuller statistic for all the time series variables used in the estimation are presented in table 4.1.2.

Table 4.1.2: Test for Stationarity

Variable	ADF Statistic At Levels	Critical Value at 5%	ADF Statistic at First Difference	Critical Value at 5%	ADF Statistic at Second Difference	Critical Value at 5%	Order of Integration
RGDP	10.61760	-2.954021	-0.941752	-2.960411	-7.845605	-2.960411	1(2)
OREV	-0.647455	-2.954021	-5.948479	-2.960411			1(1)
OEX	0.295801	-2.954021	-4.493656	-2.957110			1(1)
GEX	-3.357510	-2.963972					1(0)

Source: Author’s Computation from Unit Root Test (ADF)

The results of the ADF test statistics show that GEX was stationary at levels while OREV and OEX were not stationary in their level form but became stationary after the first difference. However, RGDP became stationary after the second difference. The implication of these

results is that the lengths of sustained shock are not the same among the variables. Variables integrated of order two will exhibit a more persistent shock than the variables integrated of order one. Simply put, any shock received by such variables will take a very long period

before the effect disappears (Matthew and Mordecai, 2016). These results do not favour the required necessary condition for co-integration; therefore a condition for the better alternative, the Vector Autoregression (VAR) was met. The results of the VAR are discussed in subsequent sections.

4.2. Vector Autoregression Analysis

The short-run dynamics of the relationship between the macroeconomic variables (economic growth, oil revenue, oil export and government expenditure) was estimated using the VAR model. The VAR was estimated in a multivariate form.

Table 4.2.1: Vector Autoregression Estimates

Vector Autoregression Estimates				
Date: 05/01/16 Time: 05:18				
Sample(adjusted): 1983 2014				
Included observations: 32 after adjusting endpoints				
Standard errors in () & t-statistics in []				
	RGDP	OREV	OEX	GEX
RGDP(-1)	1.222383 (0.19453) [6.28370]	9.425642 (13.6222) [0.69193]	10.52294 (19.1646) [0.54908]	2.332667 (5.16034) [0.45204]
RGDP(-2)	-0.243095 (0.20916) [-1.16223]	-6.226252 (14.6467) [-0.42510]	-8.981860 (20.6059) [-0.43589]	-1.475857 (5.54842) [-0.26600]
OREV(-1)	0.001215 (0.00461) [0.26365]	-0.658083 (0.32262) [-2.03978]	-0.688019 (0.45389) [-1.51584]	-0.086806 (0.12222) [-0.71027]
OREV(-2)	0.008820 (0.00537) [1.64252]	1.267733 (0.37604) [3.37127]	1.295756 (0.52904) [2.44927]	0.246538 (0.14245) [1.73069]
OEX(-1)	-0.002023 (0.00556) [-0.36403]	1.419712 (0.38918) [3.64797]	1.601374 (0.54752) [2.92478]	0.142280 (0.14743) [0.96509]
OEX(-2)	-0.008039 (0.00597) [-1.34760]	-1.903359 (0.41775) [-4.55622]	-1.715919 (0.58772) [-2.91964]	-0.229858 (0.15825) [-1.45249]
GEX(-1)	0.017561 (0.01370) [1.28207]	0.232307 (0.95917) [0.24220]	0.349653 (1.34941) [0.25911]	0.599863 (0.36335) [1.65093]
GEX(-2)	0.007021 (0.01277) [0.54992]	1.117340 (0.89407) [1.24972]	1.552930 (1.25784) [1.23460]	0.314811 (0.33869) [0.92949]
C	11.76861 (17.9725) [0.65481]	-937.2508 (1258.54) [-0.74472]	-441.8318 (1770.58) [-0.24954]	-190.0871 (476.755) [-0.39871]
R-squared	0.998386	0.949942	0.968170	0.980322
Adj. R-squared	0.997824	0.932530	0.957098	0.973478
Sum sq. Resids	2503.245	12274844	24295091	1761472.
S.E. equation	10.43249	730.5401	1027.769	276.7413
F-statistic	1778.155	54.55815	87.44791	143.2310

Source: Author's Computation from E-views

The VAR was estimated based on 2 lags. The result in Table 4.2.1 indicated that most of the lags of the variables were not significant. This is expected possibly because of multicollinearity (Gujarati & Porter, 2009). But the R^2 of the RGDP, OREV, OEX and GEX regressions of 0.998386, 0.949942, 0.968170 and 0.980322 respectively and their respective F value (1778.155, 54.55815, 87.44791 and 143.2310) are so high that we cannot reject the hypothesis that collectively all the lagged terms are statistically significant. Economic growth (RGDP) having an R^2 of 0.998386 and government expenditure with an R^2 of 0.980322 are more endogenous. That is, the impact of oil revenue, given oil export is more pronounced to affect economic growth and government spending.

4.2.1. Shock Transmission among Economic Growth, Oil Revenue, Oil Export and Government Expenditure

The next analysis is the short-run shock transmission among the variables. This analysis was done using the variance decomposition and impulse response which are measures of short-run dynamics of the VAR. The results are presented in Tables 4.2.2 and 4.2.3 respectively. The variance decomposition in Table 4.2.2 analyzes the decomposition of the shocks received by each macroeconomic variable to its constituent sources. It is another way of describing causes and sources of variations or shocks to the variables. The 34 years period under study is summarized into a decimal, a 10 year period.

Table 4.2.2: Variance Decomposition Results

Decomposition of RGDP:

Period	S.E.	RGDP	OREV	OEX	GEX
1	10.43249	100.0000	0.000000	0.000000	0.000000
2	16.86610	94.84694	0.773575	1.228460	3.151024
3	22.62307	85.45578	3.415713	0.916996	10.21151
4	29.00124	73.44901	7.570478	1.600724	17.37979
5	35.69208	64.06525	10.39470	1.854302	23.68575
6	42.66774	56.76738	12.02042	1.677513	29.53469
7	49.84696	51.40816	12.72076	1.444156	34.42693
8	57.10490	47.66114	12.76600	1.176265	38.39659
9	64.45385	45.05417	12.49058	0.945204	41.51004
10	71.90827	43.30723	12.07662	0.764889	43.85126

Decomposition of OREV:

Period	S.E.	RGDP	OREV	OEX	GEX
1	730.5401	0.056476	99.94352	0.000000	0.000000
2	1377.030	2.152656	56.69765	41.06697	0.082722
3	1445.397	2.739336	55.55902	37.28882	4.412823
4	1550.480	2.602202	50.85178	32.55922	13.98680
5	1610.506	2.818523	47.39873	30.23598	19.54677
6	1667.373	3.028950	44.25899	29.90026	22.81179
7	1702.417	3.506296	42.50993	29.40454	24.57924
8	1726.617	4.302683	41.43009	29.04266	25.22457
9	1747.185	5.303423	40.49569	28.67990	25.52099
10	1766.031	6.538114	39.63799	28.12716	25.69674

Decomposition of OEX:

Period	S.E.	RGDP	OREV	OEX	GEX
1	1027.769	0.603831	66.10885	33.28732	0.000000
2	1705.741	1.993833	50.69165	47.19238	0.122132
3	1920.098	2.358973	52.61343	40.58642	4.441175
4	2143.211	2.370646	50.82132	34.64600	12.16203
5	2293.030	2.590835	47.78955	30.68417	18.93544
6	2409.549	2.861167	44.49378	27.84424	24.80081
7	2500.061	3.349917	41.79113	25.96620	28.89274
8	2570.606	4.099617	39.64432	24.79040	31.46567
9	2630.755	5.094241	37.90200	23.90976	33.09400
10	2684.809	6.364631	36.44280	23.08486	34.10771

Decomposition of GEX:

Period	S.E.	RGDP	OREV	OEX	GEX
1	276.7413	0.024068	22.14393	39.88004	37.95196
2	376.8924	0.964637	24.50777	46.70267	27.82493
3	448.0326	1.416643	32.43875	38.41358	27.73102
4	540.3348	2.069609	36.54510	34.99721	26.38808
5	602.8182	2.841073	37.35630	30.70958	29.09304
6	656.4438	3.489802	36.41345	26.47103	33.62571
7	701.6215	4.295727	34.53459	23.34100	37.82867
8	739.3195	5.271051	32.33966	21.02535	41.36394
9	772.6830	6.458295	30.26368	19.30446	43.97356
10	802.7747	7.921544	28.42113	17.96453	45.69280

Cholesky Ordering: RGDP OREV OEX GEX

Source: Author's Computation from E-views

The greater contribution to shocks in economic growth apart from feedback shocks was received from shock to government expenditure. Government expenditure created over 10% shock for the first three year period and about 44% shock for the ten year period to influence economic growth in Nigeria. This was followed by shocks received from oil revenue to economic growth, contributing over 3% shock to RGDP for the first three year period and over 12% shock to RGDP for the ten year period, while oil export contributed the least to shocks in RGDP for the ten year period.

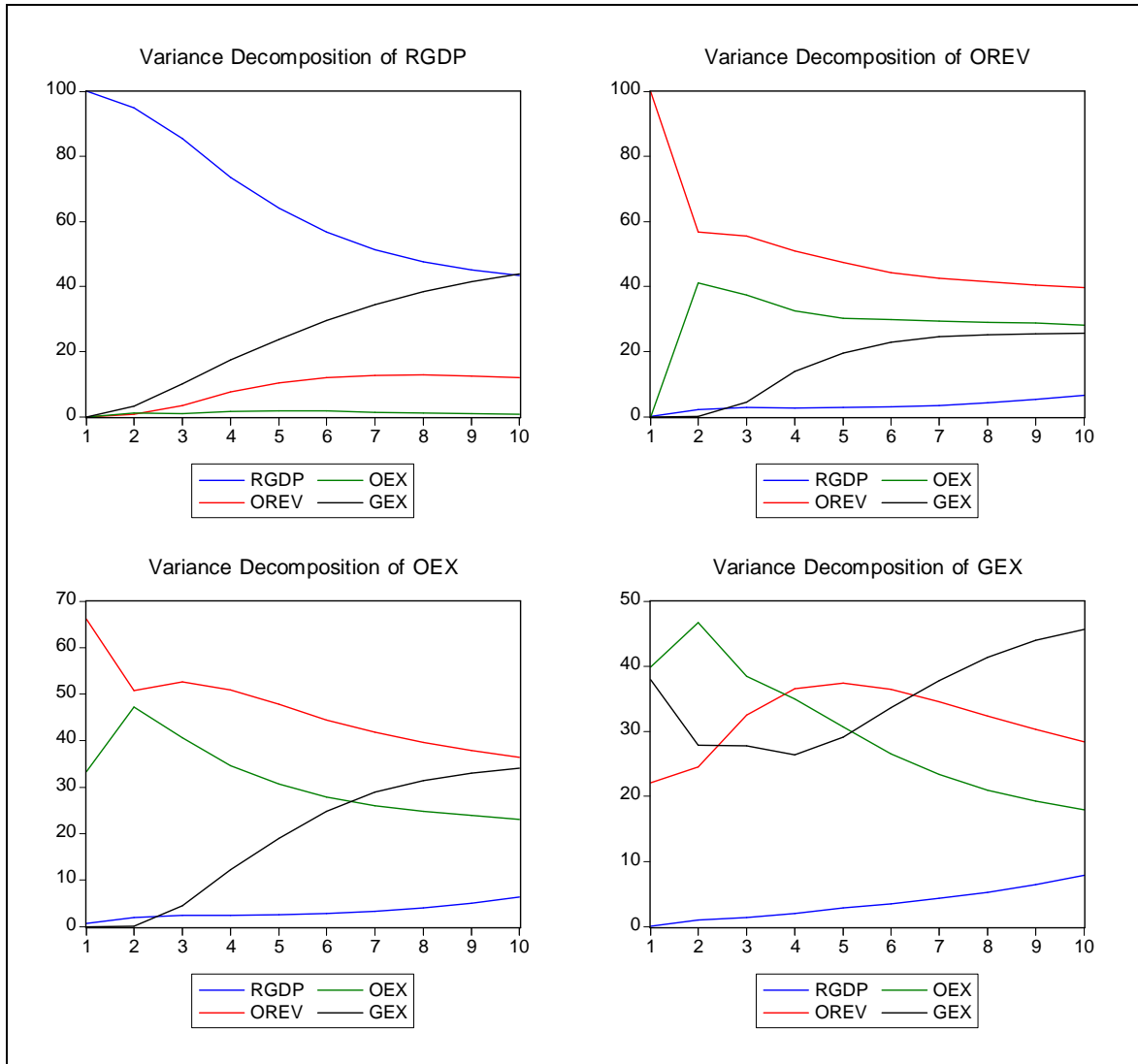
Oil export contributed the most to shocks in oil revenue of over 28% for the ten year period, followed by government expenditure and then economic growth. Meanwhile, apart from feedback shocks, Oil revenue contributed the most to shocks in oil export by about 53% and 36% for the third and ten year period respectively, followed by government expenditure, while economic growth contributed the least to shocks in oil export.

Also, the average contributions of oil export and oil revenue to government expenditure shock over the three and ten year period are 32% & 28% and 38% & 18% respectively, while

economic growth contributed the least to shocks in government expenditure. Comparing the shocks received by economic growth and government expenditure from shocks to oil revenue and oil export, this result indicated that

oil revenue and oil export exerts more pressure on the growth rate of government spending than it does to economic growth. This trend is also depicted in Fig. 4.1.

Figure 4.1: Variance Decomposition Graph



Source: Author's Computation from E-views

Impulse response function is another method of analyzing the short-run dynamics of the relationships among a set of endogenous variables. It measures the response of a particular endogenous variable to one standard deviation shock or innovation to other

endogenous variables. It is another way of saying how a particular variable does responds to shocks in other variables. Table 4.2.3 below presents the Impulse Response analysis of the variables.

Table 4.2.2: Impulse Response Function Results**Response of RGDP**

Period	RGDP	OREV	OEX	GEX
1	10.43249 (1.30406)	0.000000 (0.00000)	0.000000 (0.00000)	0.000000 (0.00000)
2	12.68740 (2.63369)	1.483426 (2.31687)	1.869370 (3.11501)	2.993923 (2.36502)
3	12.94444 (3.60353)	3.909115 (4.52900)	1.094838 (4.10434)	6.580217 (3.59606)
4	13.43107 (4.37760)	6.796429 (6.92392)	2.961424 (5.43009)	9.690910 (5.06514)
5	14.08488 (5.28049)	8.291408 (8.97461)	3.187345 (7.20108)	12.47245 (6.69893)
6	14.74204 (6.17894)	9.295991 (10.8144)	2.630080 (8.64455)	15.36070 (8.47896)
7	15.61659 (7.04579)	9.860987 (12.5242)	2.311600 (10.1087)	17.82478 (10.2980)
8	16.63931 (7.90215)	10.01101 (13.9741)	1.573027 (11.5058)	19.91705 (12.0159)
9	17.81769 (8.75753)	10.12919 (15.1637)	0.953398 (12.7473)	21.73362 (13.5791)
10	19.17406 (9.64192)	10.27433 (16.1124)	0.533165 (13.8697)	23.30256 (14.9560)

Response of OREV

Period	RGDP	OREV	OEX	GEX
1	17.36110 (129.124)	730.3338 (91.2917)	0.000000 (0.00000)	0.000000 (0.00000)
2	201.2896 (247.748)	736.0163 (238.940)	882.4492 (241.155)	39.60525 (163.600)
3	128.1038 (253.750)	292.6033 (337.979)	-17.64978 (355.403)	301.0364 (293.839)
4	72.98751 (167.878)	248.4892 (382.431)	-60.76023 (325.075)	494.0139 (281.069)
5	102.7045 (165.973)	83.21162 (381.546)	-38.98349 (327.569)	413.2181 (273.949)
6	105.3752 (156.329)	-32.60813 (347.956)	-216.8574 (295.909)	356.6616 (279.082)
7	131.9527 (151.012)	-39.68189 (345.908)	-144.7158 (321.656)	279.5774 (277.244)
8	163.2529 (140.031)	-55.52384 (336.198)	-116.6693 (287.280)	199.0852 (260.678)
9	183.3669 (131.923)	-32.83181 (330.479)	-98.37256 (284.297)	164.5339 (245.913)
10	204.9873 (128.233)	7.859911 (299.703)	-41.83260 (254.573)	149.5972 (239.040)

Response of OEX:

Period	RGDP	OREV	OEX	GEX
1	79.86438 (181.411)	835.6514 (147.984)	592.9728 (74.1216)	0.000000 (0.00000)
2	227.2296 (309.145)	881.2416 (303.565)	1010.678 (327.105)	59.61119 (230.178)
3	170.1720 (335.532)	681.7919 (457.760)	351.0617 (408.731)	400.2284 (359.274)
4	148.0611 (285.583)	628.2223 (578.797)	308.3550 (422.319)	628.4180 (407.014)
5	165.3287 (281.455)	422.3325 (621.258)	148.1750 (487.059)	661.0426 (453.096)
6	172.8917 (271.480)	265.5354 (601.553)	-56.98409 (487.547)	666.5543 (485.523)
7	207.9969 (265.009)	169.6934 (583.651)	-79.68568 (504.187)	604.9520 (495.832)
8	248.0389 (260.030)	87.34825 (561.899)	-123.2336 (493.194)	522.8496 (481.905)
9	285.7665 (257.327)	58.69563 (548.093)	-128.8789 (493.908)	459.4961 (457.142)
10	325.8982 (256.350)	61.01629 (519.511)	-96.12654 (461.976)	410.0727 (434.395)

Response of GEX:

Period	RGDP	OREV	OEX	GEX
1	4.293346 (48.9185)	130.2271 (46.1275)	174.7639 (37.2227)	170.4869 (21.3109)
2	36.76702 (69.3779)	133.6176 (72.1358)	189.2028 (86.4789)	102.2689 (63.2515)
3	38.38523 (73.2782)	174.0764 (103.572)	103.7723 (87.1208)	127.0459 (76.7918)
4	56.55789 (78.3998)	203.9175 (140.018)	158.3340 (103.248)	146.2113 (96.0224)
5	65.43473 (84.6360)	170.4444 (161.737)	97.04133 (130.844)	169.3459 (121.158)
6	68.65879 (84.6661)	145.4761 (170.961)	49.73019 (135.150)	197.9351 (138.780)
7	78.15686 (85.2590)	114.4207 (172.830)	28.85888 (141.814)	203.2753 (150.351)
8	87.54724 (86.8660)	82.23139 (167.355)	-4.663251 (145.829)	199.6804 (154.301)
9	98.72856 (88.9059)	62.60684 (162.629)	-18.22214 (149.367)	190.9104 (152.420)
10	111.7660 (91.1728)	49.73096 (157.574)	-22.73127 (146.392)	178.6802 (146.697)

Cholesky Ordering: RGDP OREV OEX GEX

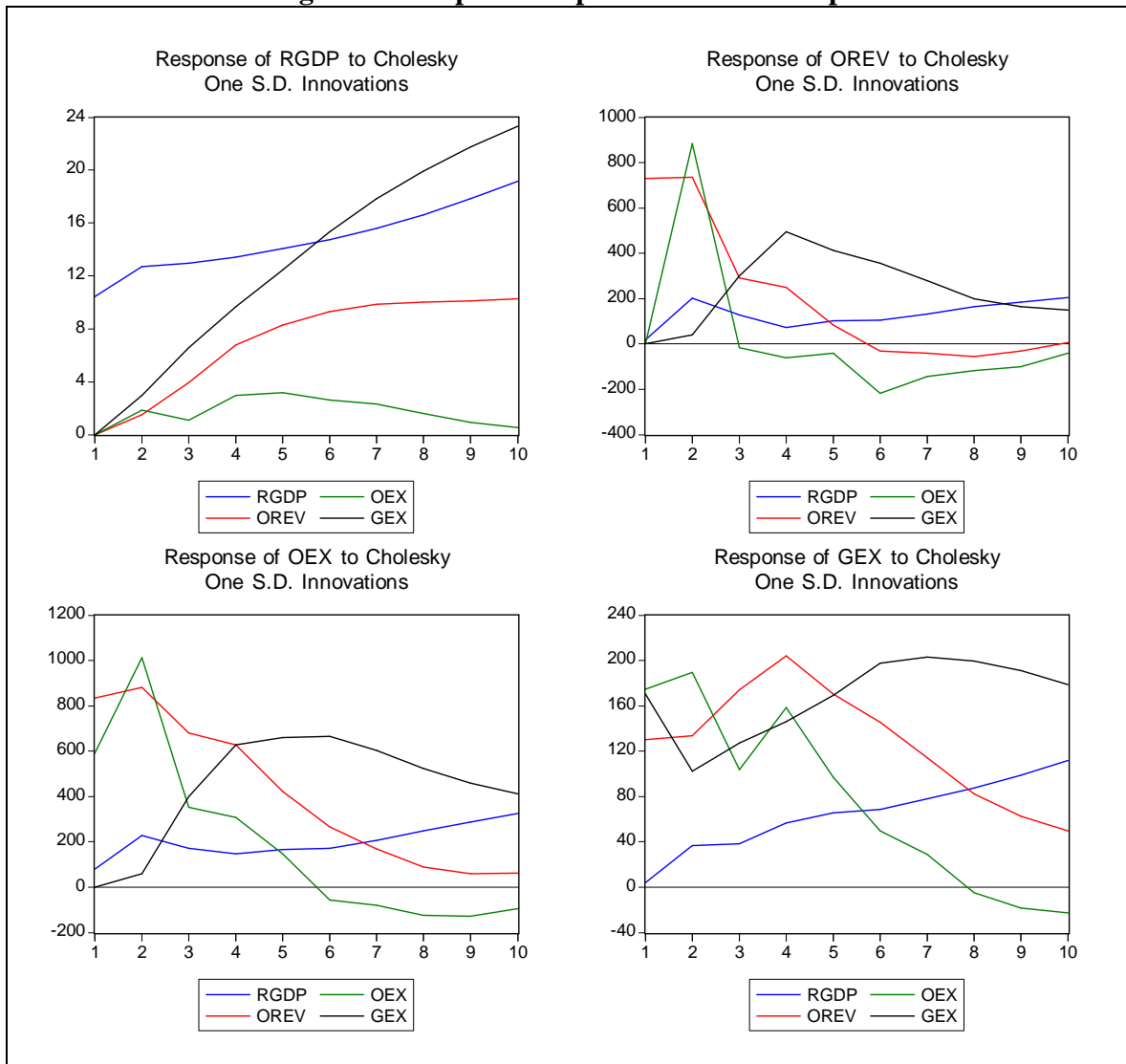
Standard Errors: Analytic

Source: Author's Computation from E-views

The results of the impulse response revealed that economic growth responded positively to shocks in oil revenue, oil export and government spending throughout the 10 year period. Also, oil export responded positively to shocks in economic growth, oil revenue and government spending throughout the 10 year period. This is also reflected in the pattern of the Impulse Response graph (Fig 4.2). The response of oil

revenue to shocks in economic growth and government expenditure was positive, and the response of government expenditure to shocks in economic growth and oil revenue was also positive. Oil revenue and government expenditure responded positively to shocks in oil export in the short periods but became unstable in the long-run. This trend is also depicted in Fig. 4.2.

Figure 4.2: Impulse Response Function Graph



Source: Author's Computation from E-views

4.3. Policy Implication of the Findings: The implication of the findings of the VAR model is that there exists a significant long-run relationship between oil revenue, oil export,

government expenditure and economic growth of Nigeria. The result of the multivariate VAR model indicated that most of the lags of the variables in the regression were not significant.

However, the high level of the R^2 and F value in the VAR regression estimates gave convincing results that collectively all the lagged terms are statistically significant, implying that there is significant shock transmission between oil revenue, oil export, government expenditure and economic growth of Nigeria.

The variance decomposition analysis revealed that oil revenue and oil export exerts more pressure on the growth rate of government expenditure than it does to economic growth, hence any change in oil revenue and oil export will be felt more on government spending. Meanwhile government expenditure has a highly significant influence on economic growth.

Furthermore, the results of the impulse response function in support of the variance decomposition analysis revealed that oil revenue, oil export and government spending have direct effects on economic growth of Nigeria. And economic growth, oil revenue and oil export significantly influences government spending in the country.

5. Summary, Recommendations and Conclusion

5.1. Summary: This paper empirically examined the relationship between crude oil, government expenditure and economic growth of Nigeria for the period 1981 to 2014 using annual time series data on such variables as; oil revenue, oil export, government expenditure and real GDP, sourced from the Central Bank of Nigeria statistical bulletin and National Bureau of Statistics, 2014. The study employed the Augmented Dickey-Fuller Unit Root test and the Vector Autoregression method. The findings of the multivariate VAR model revealed that there exists a significant long-run relationship between oil revenue, oil export, government expenditure and economic growth of Nigeria, judging from the high R^2 of the real GDP, oil revenue, oil export and government expenditure regression of 0.998386, 0.949942, 0.968170 and 0.980322 respectively, and their respective F value (1778.155, 54.55815, 87.44791 and 143.2310).

The variance decomposition analysis revealed that oil revenue and oil export exerts more pressure on the growth rate of government spending than it does to economic growth. Meanwhile government expenditure has a highly significant influence on economic growth. The findings of the impulse response function in support of the variance decomposition analysis revealed that oil revenue, oil export and government spending have direct effects on economic growth of Nigeria. Also, economic growth, oil revenue and oil export significantly influences government spending in the country.

5.2. Conclusion: It is concluded from the foregoing results that there exists a significant shock transmission between oil revenue, oil export, government expenditure and economic growth of Nigeria. Oil revenue and oil export exerts more pressure on the growth rate of government expenditure than it does to economic growth, hence any change in oil revenue and oil export will be felt more on government spending. Meanwhile, government expenditure has a highly significant influence on economic growth.

It is also inferred that oil revenue, oil export and government spending have direct effects on economic growth of Nigeria and, economic growth, oil revenue and oil export significantly influences government spending in the country. Hence, the poor performance of the Nigerian economy may not be entirely due to oil activities, but to factors relating to policy management of oil resources in the country.

5.3. Recommendations: The following recommendations were made based on the findings of the study:

- i. Macroeconomic policies aimed at enhancing output in the oil sub-sector should be embarked upon by the government. In doing so, revenue would improve and more funds would be available for spending, and growth. However, it must be burn in mind that in trying to enhance oil production, the government must not over-concentrate on

- the oil sub-sector by shifting interest from the non-oil sector in the country.
- ii. To reduce the loss from illegal export of crude oil products, security should be boosted on the high sea where crude oil products are being smuggled.
 - iii. The government must stop paying lip-service to the issue of combating corruption and match her words and commitment with actions by bringing defaulters to book, seizure of ill gotten assets and other corruption combating strategies so as to savage the nation from this monster.
 - iv. National security should be strengthened and tightened to abate security challenges (like the Boko Haram insurgency, vandalism, armed robbery, kidnapping and ethnic militants) so as to protect and encourage investment in the oil sector of the country.
 - v. The government should encourage more private company participation. So that better equipped refineries can be built and the cost of refining crude oil will reduce.

Competing Interests: Authors have declared that no competing interests exist.

References

- Abdullahi, U., Madu, I. F. and Abdullahi, F. (2015). Evidence of Petroleum Resources on Nigerian Economic Development (2000-2009). *Business and Economics Journal*, 2(6), 1-4.
- Adedipe, B. (2004). *The impact of oil on Nigeria's economic policy formulation*. [Online]. Available: <http://www.odi.org.uk/events/2004/06/16/32-background-paper-sunday-abiodun-adedipe-impact-oilnigerias-economic-policy-formulation.pdf>
- Adedokun, A. J. (2012). Oil Export and Economic Growth: Descriptive Analysis and Empirical Evidence from Nigeria. *Pakistan Journal of Social Sciences*, 9(1), 46-58. Available: <http://dx.doi.org/10.3923/pjssci.2012.46.58>
- African Economic Outlook (2012). Nigeria, 2012. Available: www.africaneconomicoutlook.org
- Aigbokan, B. E. (2001). *Resuscitating agricultural production (cocoa, cotton, groundnuts, palm oil, rubber, etc) for exports*. [Online]. Available: <http://www.cenbank.org/out/publications/occasionalpapers/rd/2001/owe-01-6.PDF>
- Akinlo, A. E. (2012). How important is Oil in Nigeria's Economic Growth? *Journal of Sustainable Development*, 5, 165-179. Available: <http://dx.doi.org/10.5539/jsd.v5n4p165>
- Al-Qudair, K. H. A. (2005). The Relationship between Government Expenditure and Revenues in the Kingdom of Saudi Arabia: Testing for Cointegration and Causality. *JKAU: Economics and Administration*, 19(1), 31-43. Available: <http://dx.doi.org/10.4197/eco.19-1.2>
- Aregbeyen, O. and Kolawole, B.O. (2015). Oil Revenue, Public Spending and Economic Growth Relationships in Nigeria. *Journal of Sustainable Development*, 3(8), 113-123.
- Asekunowo, V. O. and Olaiya, S. A. (2012). Crude Oil Revenue and Economic Development in Nigeria. *OPEC Energy Review*, 2(36), 138-169. Available: <http://ssrn.com/abstract=2077362>
- Baghebo, M. (2012). *Petroleum and Energy Economics*. Bayelsa: Kadmon Printing Press and Publishing House.
- Baghebo, M. and Atima, T. O. (2013). The impact of petroleum on economic growth in Nigeria. *Global Business and Economics Research Journal*, 2(5), 102-115.
- Bamisaye, O. A. and Obiyan, A. S. (2006). Policy analysis of oil sector in Nigeria. *European Journal of Social Sciences*. [Online]. Available: <http://eurojournals.com/ejss%203%201.pdf#page=43>
- Barungi, B., Ogunleye, E. and Zamba, C. (2015). *Nigeria 2015*. African Economic

- Outlook. Available: www.africaneconomicoutlook.org
- Canagarajah, S. and Thomas, S. (2001). *Poverty in a wealthy economy: A case of Nigeria*. International Monetary Fund. [Online]. Available from: <http://www.imf.org/external/pubs/ft/wp/2002/wp02114.pdf>
 - CBN (2014). *Economic Report for the first Half of 2014*. Available: http://www.cenbank.org/Out/2014/RSD/2013%20Half%20Year%20Economic%20Report_Final.pdf
 - CBN (2014). *Statistical Bulletin, December 2014*. Available: <http://statistics.cbn.gov.ng/cbn-onlinestats>
 - Fan, S., Yu, B. and Saurkar, A. (2008). Public Spending in Developing Countries: Trends, Determination, and Impact. In S. Fan (Ed.). *Public Expenditures, Growth, and Poverty*. Lessons from Developing Countries (pp.20-55).
 - Farzanegan, M. R. (2011). Oil Revenue Shocks and Government Spending Behaviour in Iran. *Energy Economics*, 33(6), 1055-1069. Available: <http://dx.doi.org/10.1016/j.eneco.2011.05.005>
 - Gujarati, D.N. and Porter, D.C. (2009). *Basic Econometrics*. New York, California: McGraw Hill International Edition.
 - Hamdi, H. and Sbia, R. (2013). Dynamic relationships between oil revenues, government spending and economic growth in an oil-dependent economy. *Economic Modelling*, 35(C), 118-125. Available: <http://dx.doi.org/10.1016/j.econmod.2013.06.043>
 - Ibrahim, M. J. (2007). *Growth prospects of oil and gas abundant economies: the Nigerian experience (1970-2000)*. [Online]. Available: <http://www.emeraldinsight.com/journals.htm?articleid=1724410&show=pdf>
 - Ishola, S.A. Olaleye, S.O. Olajide, A.R. and Abikoye, O.A. (2015). Government Expenditure, Oil Revenue and Economic Growth in Nigeria. *International Journal of Economics, Commerce and Management*, 5(3), 180-202.
 - Jhingan, M. L. (2010). *Macroeconomic theory* (12th ed.). New Delhi: Vrinda publications Ltd.
 - wanashie, M., Ajilima, I. and Garba, A. G. (1997). *The Nigerian economy: response of agriculture to adjustment policies*. [Online]. Available from: <http://www.aercafrica.org/DOCUMENTS/RP78.PDF>
 - Matthew, A. and Mordecai, D.B. (2016). The Impact of Agricultural Output on Economic Development in Nigeria. *Archives of Current Research International*, 4(1): 1-10.
 - National Bureau of Statistics (2014). *National Accounts of Nigeria*. Abuja: National Bureau of Statistics.
 - Odularu, G. O. (2008). *Crude oil and the Nigerian economic performance*. [Online]. Available: http://www.ogbus.ru/eng/authors/Odularu/Odularu_1.pdf
 - Ogwumike, F. O. and Ogunleye, E. K. (2008). *Resource-led development: an illustrative example from Nigeria*. [Online]. Available: <http://onlinelibrary.wiley.com/doi/10.1111/j.1467-8268.2008.00182.x/full>
 - Oladipo, S. O. and Fabayo, J. O. (2012). Global Recession, Oil Sector and Economic Growth in Nigeria. *Asian Transactions on Basic and Applied Sciences*, 1(6), 29-41.
 - Oyinlola, M. A., and Akinnibosun, O. (2013). Public Expenditure and Economic Growth Nexus: Further Evidence from Nigeria. *Journal of Economics and International Finance*, 5(4), 146-154. Available: <http://dx.doi.org/10.5897/JEIF2013.0489>
 - Ram, R. (1986). Government Size and Economic Growth: A New Framework and

- some Evidence from Cross-Section and Time Series Data. *America Economic Review*, 76, 191-203.
- Ram, R. (1988). Additional Evidence on Causality between Government Revenue and Government Expenditure. *Southern Economic Journal*, 58, 763-769. Available: <http://dx.doi.org/10.2307/1059018>
 - The World Bank (2014). *Nigeria Economic Report*. Washington, DC: World Bank www.worldbank.org/data
 - United State Agency for International Development (2006). *Nigeria Economic Performance Assessment*. United States: Nathan Associates Inc.
 - Wikipedia (2015). *Real Versus Nominal Value, Economics*. Retrieved from: http://en.Wikipedia.org/wiki/Real_Versus_Nominal_Value#Economics

Appendix

Appendix A: Selected Macroeconomic Indicators for Nigeria between 1981 and 2014

YEAR	RGDP (₦' Billion)	OREV (₦' Billion)	OEX(₦' Billion)	GEX (₦' Billion)
1981	251.0523	8.560000	10.70000	11.41370
1982	246.7266	7.810000	8.000000	11.92320
1983	230.3808	7.250000	7.200000	9.636500
1984	227.2547	8.270000	8.800000	9.927600
1985	253.0133	10.92000	11.20000	13.04110
1986	257.7844	8.110000	8.400000	16.22370
1987	255.9970	19.03000	28.20000	22.01870
1988	275.4096	19.83000	28.40000	27.74950
1989	295.0908	39.13000	55.00000	41.02830
1990	328.6061	71.89000	106.6000	60.26820
1991	328.6445	82.67000	116.9000	66.58440
1992	337.2886	164.0800	201.4000	92.79740
1993	342.5405	162.1000	213.8000	191.2289
1994	345.2285	160.1900	200.7000	160.8932
1995	352.6462	324.5500	927.6000	248.7681
1996	367.2181	408.7800	1286.200	337.2176
1997	377.8308	416.8100	1212.500	428.2152
1998	388.4681	324.3100	717.8000	487.1134
1999	393.1072	724.4200	1169.500	947.6900
2000	412.3320	1591.680	1920.900	701.0594
2001	431.7832	1707.560	1839.900	1018.026
2002	451.7857	1230.850	1649.400	1018.156
2003	495.0072	2074.280	2993.100	1225.966
2004	527.5760	3354.800	4489.500	1426.200
2005	561.9314	4762.400	7140.600	1822.100
2006	595.8216	5287.570	7191.100	1938.003
2007	634.2511	4462.910	8110.500	2450.897
2008	672.2026	6530.600	9861.800	3240.820
2009	718.9773	3191.940	8105.500	3452.991
2010	776.3322	5396.090	11300.50	4194.577
2011	834.0008	8878.970	14323.20	4712.062
2012	888.8930	8025.970	14260.00	4605.391
2013	950.1140	6809.230	14131.80	5185.318
2014	1017.959	6793.720	12006.97	4578.065

Source: CBN Statistical Bulletin and NBS, 2014.